

Physics  
PAPER 1  
Higher Tier

Thursday 25 May 2023 – Morning

Diagram Booklet

In the boxes below, write your name, centre number and candidate number.

Surname					
Other names					
Centre Number					
Candidate Number					

## INSTRUCTIONS

There may be spare copies of some diagrams in case you need them.

**THIS DIAGRAM BOOKLET MUST BE RETURNED WITH THE QUESTION PAPER AT THE END OF THE EXAMINATION.**

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**24    Question 2(b)(iii)**

**25    Question 5**

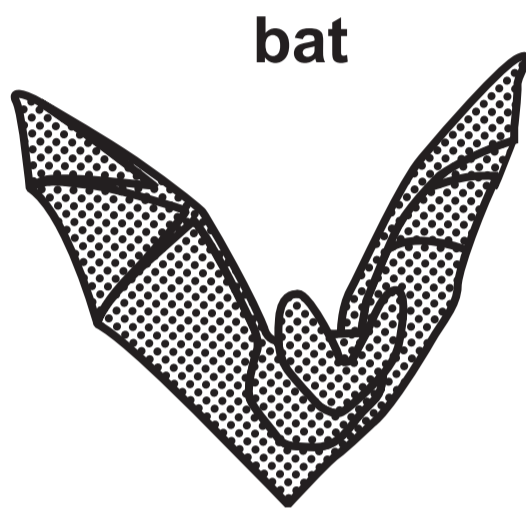
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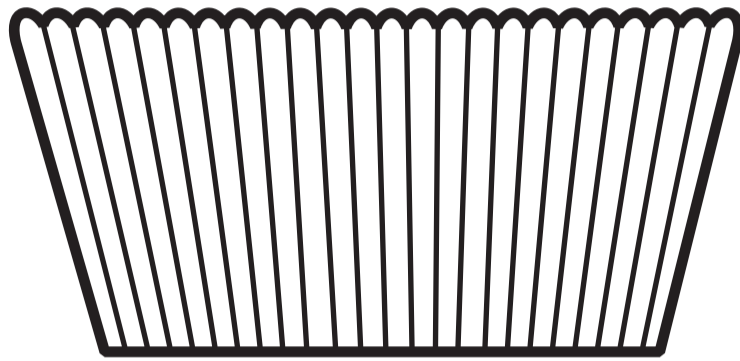
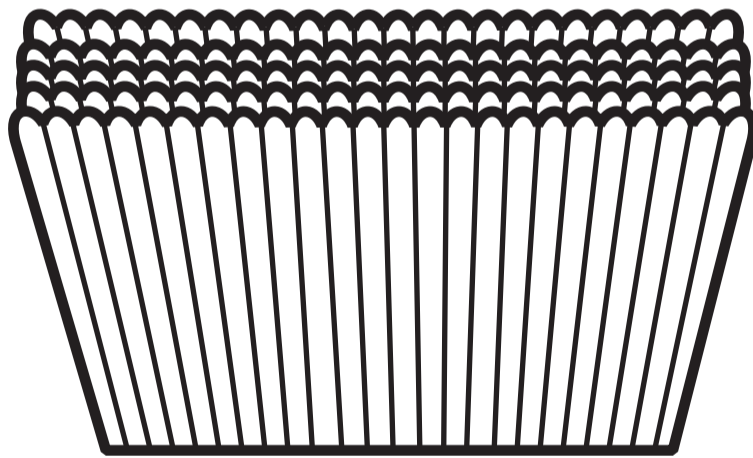
Question 1(a) – not to scale

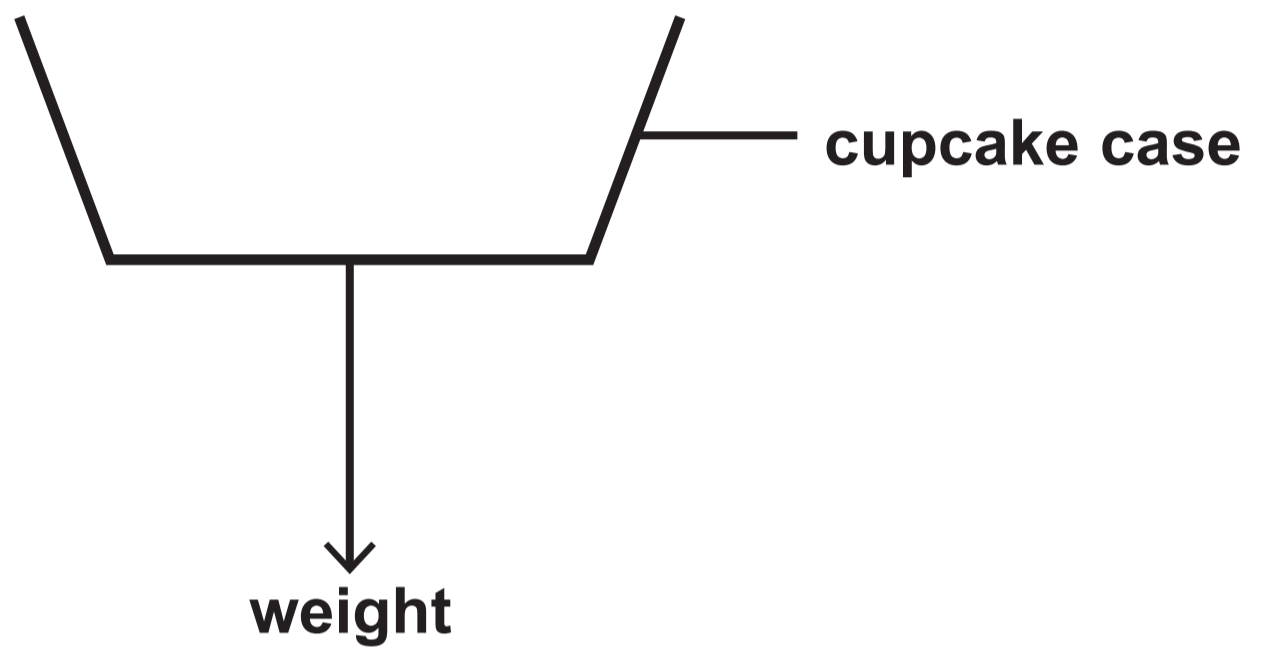
FIGURE 1



prey

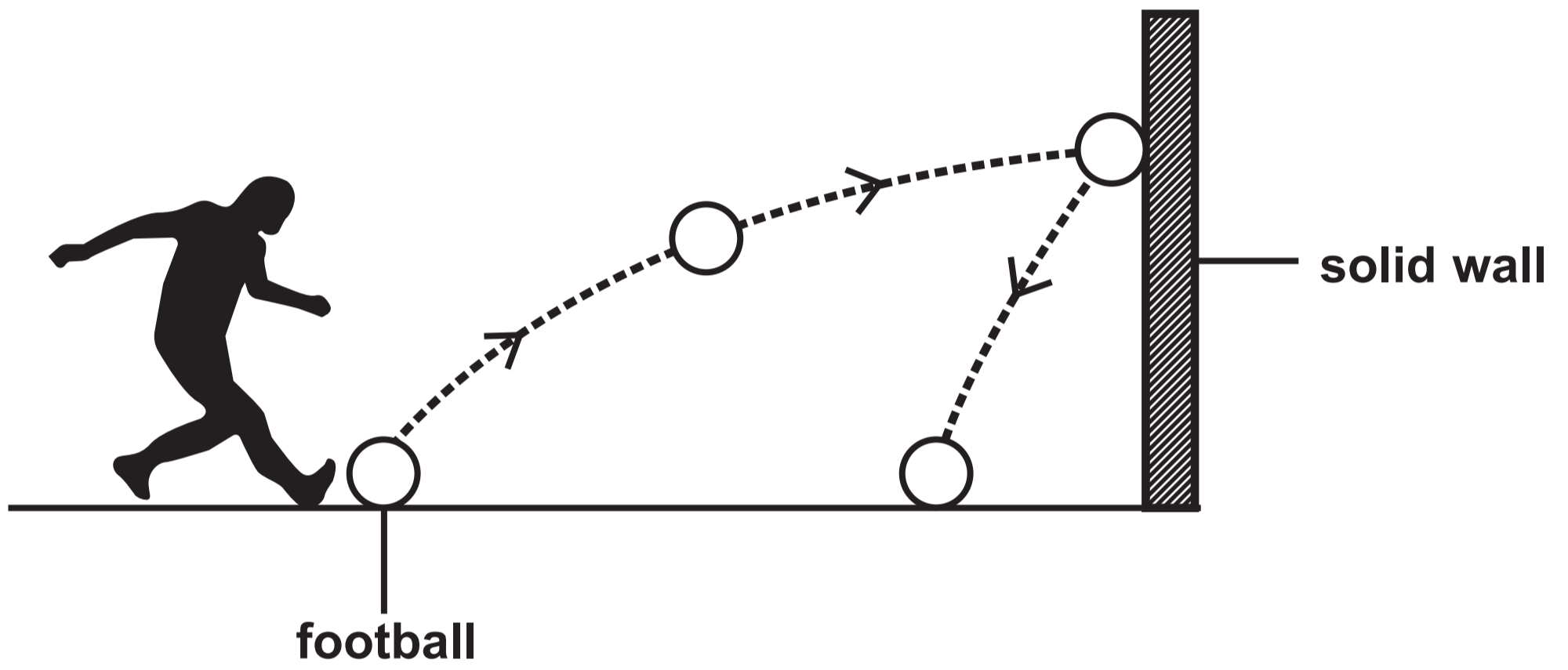


**Question 2(b)****FIGURE 2****FIGURE 3**

**Question 2(b)(iii)****FIGURE 4**

## Question 3(a)

FIGURE 5



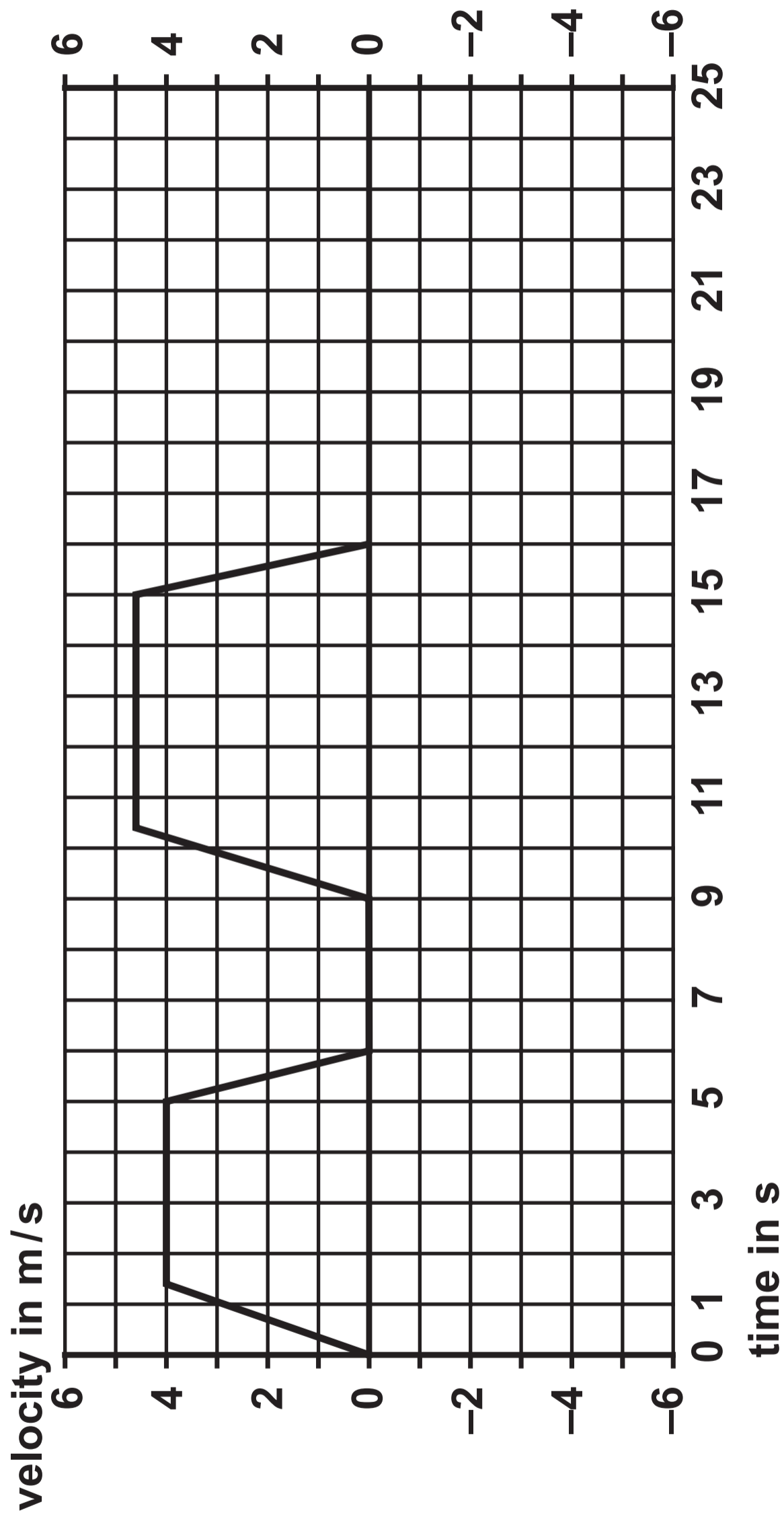
**Question 4(a)****FIGURE 6**

Question 4(c)

FIGURE 7

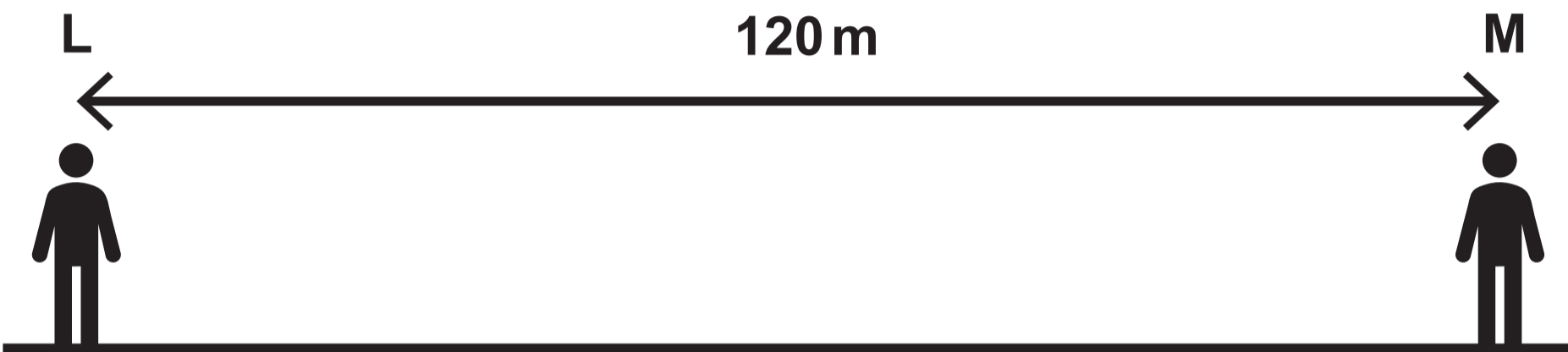
type of radiation	typical wavelength
gamma rays	$1.0 \times 10^{-12} \text{ m}$
X-rays	$3.0 \times 10^{-11} \text{ m}$
ultraviolet	200 nm
visible	600 nm
infrared	$4.0 \mu\text{m}$
microwaves	1.0 mm
radio waves	50 m

FIGURE 8



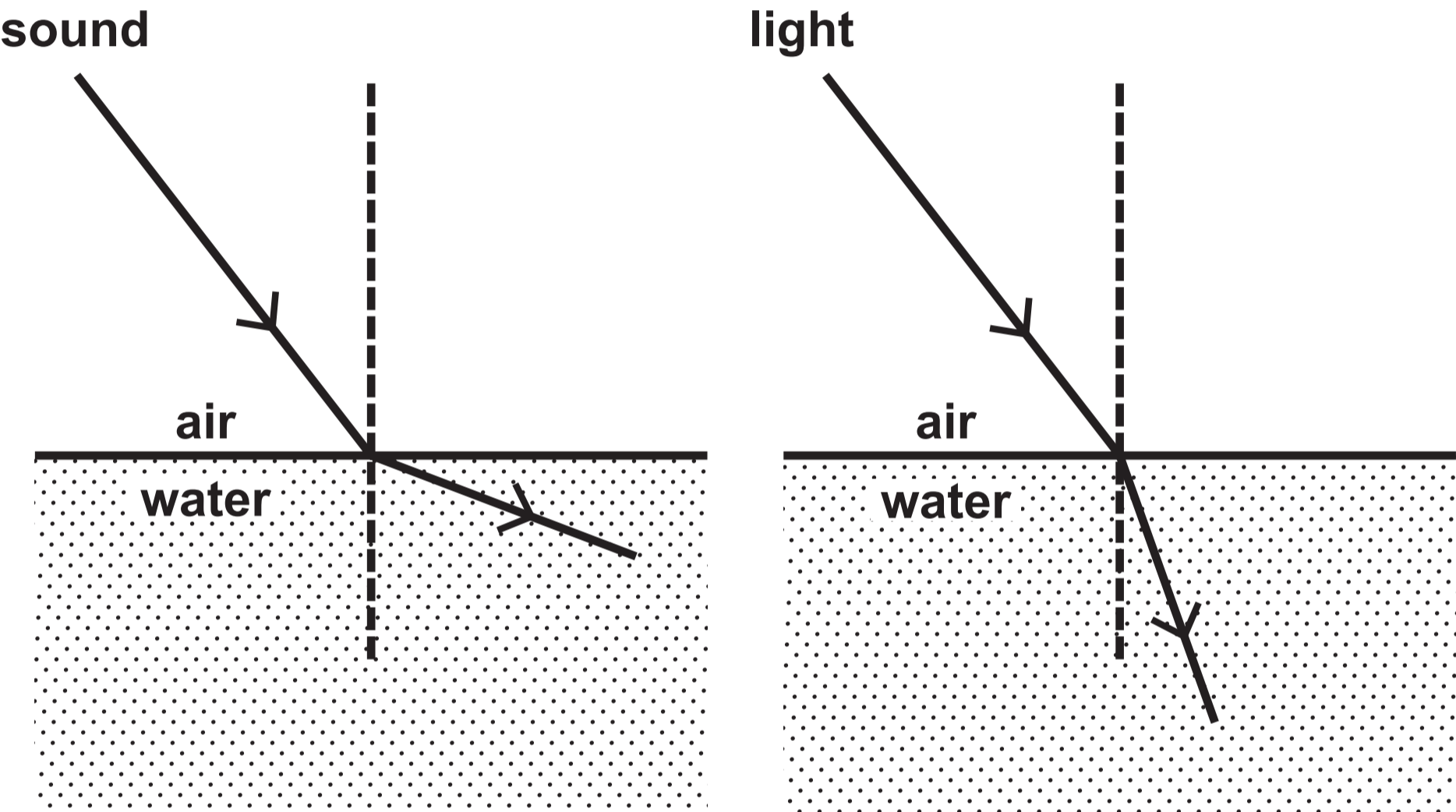
Question 6(a)

FIGURE 9



Question 6(b)

FIGURE 10



**Question 7(a)****FIGURE 11**

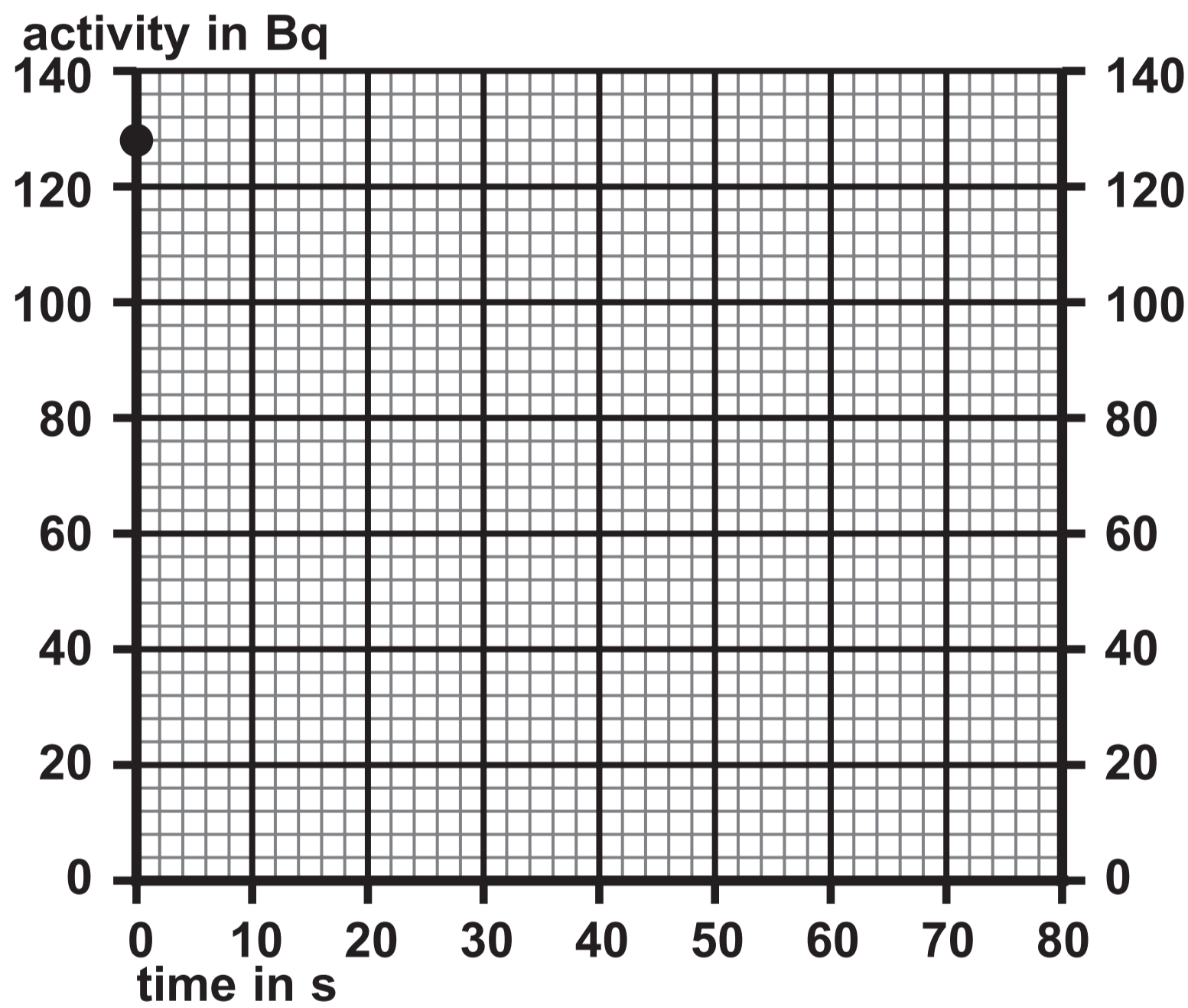
Question 7(a)(iii)

FIGURE 12



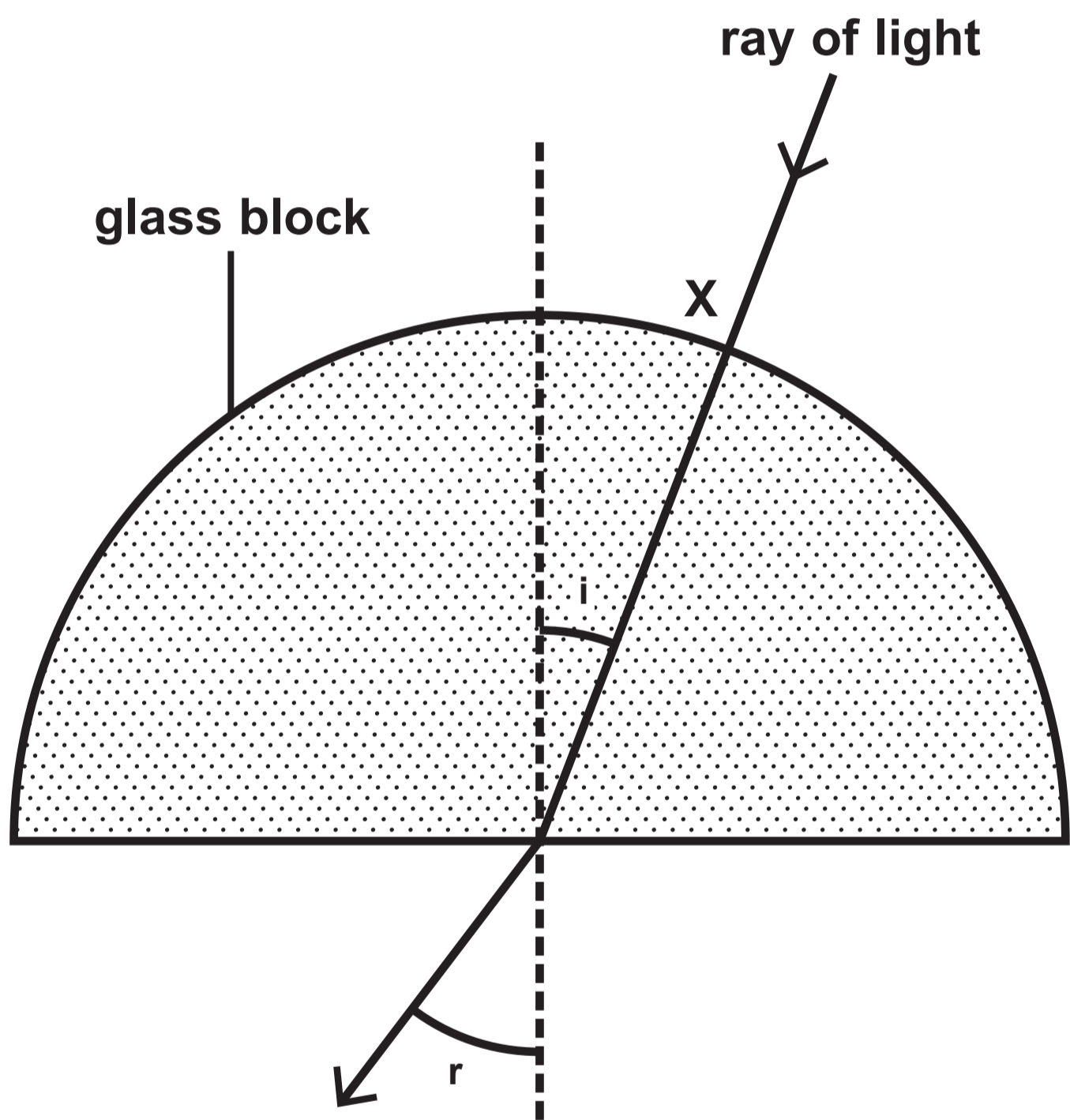
Question 7(b)

FIGURE 13



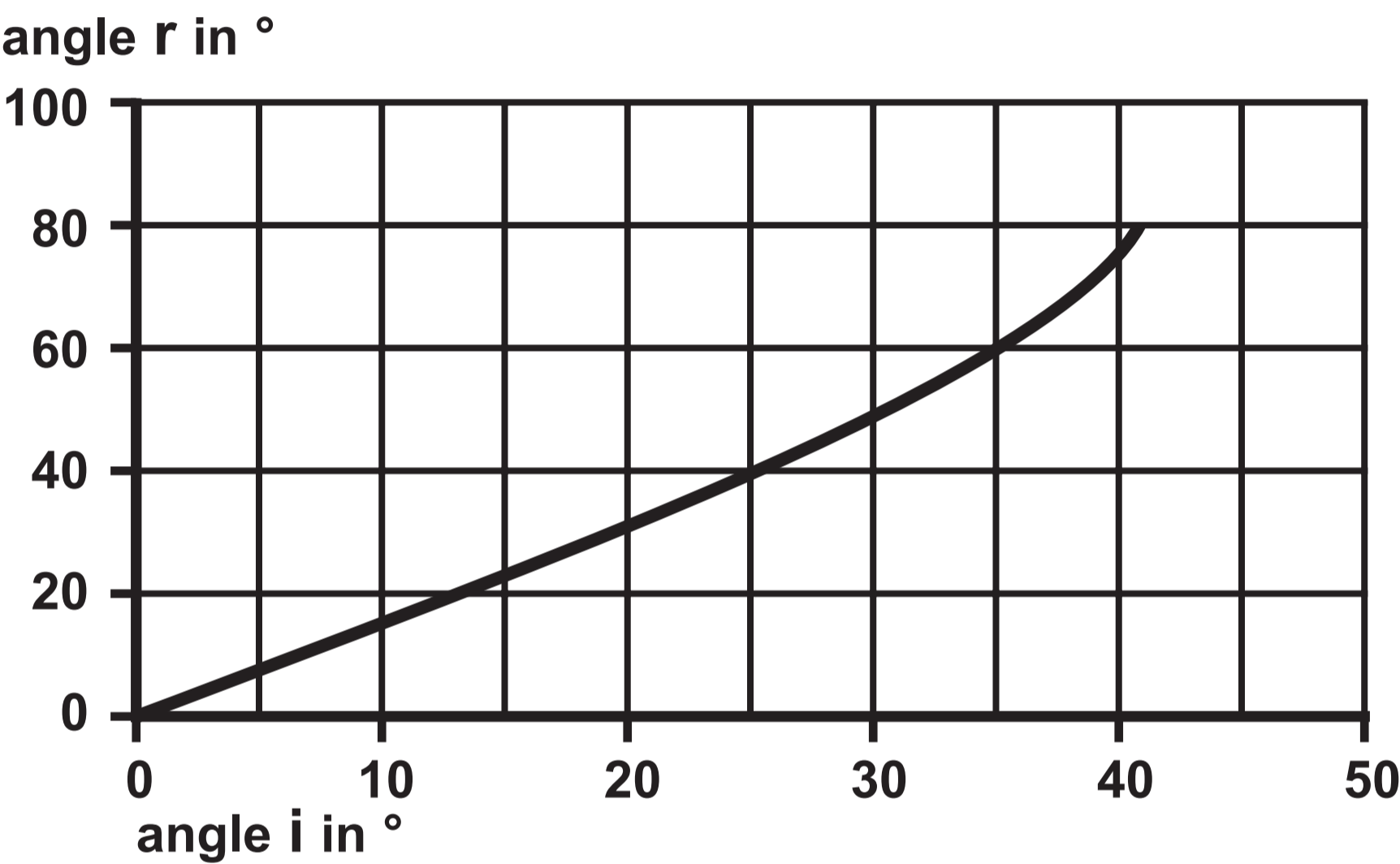
Question 8(a)(i)

FIGURE 14



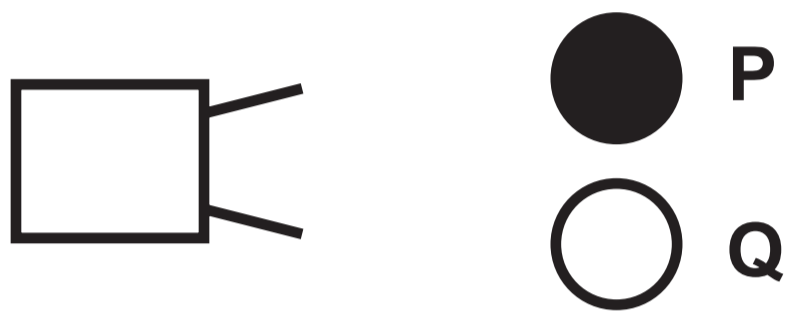
Question 8(a)(ii)

FIGURE 15



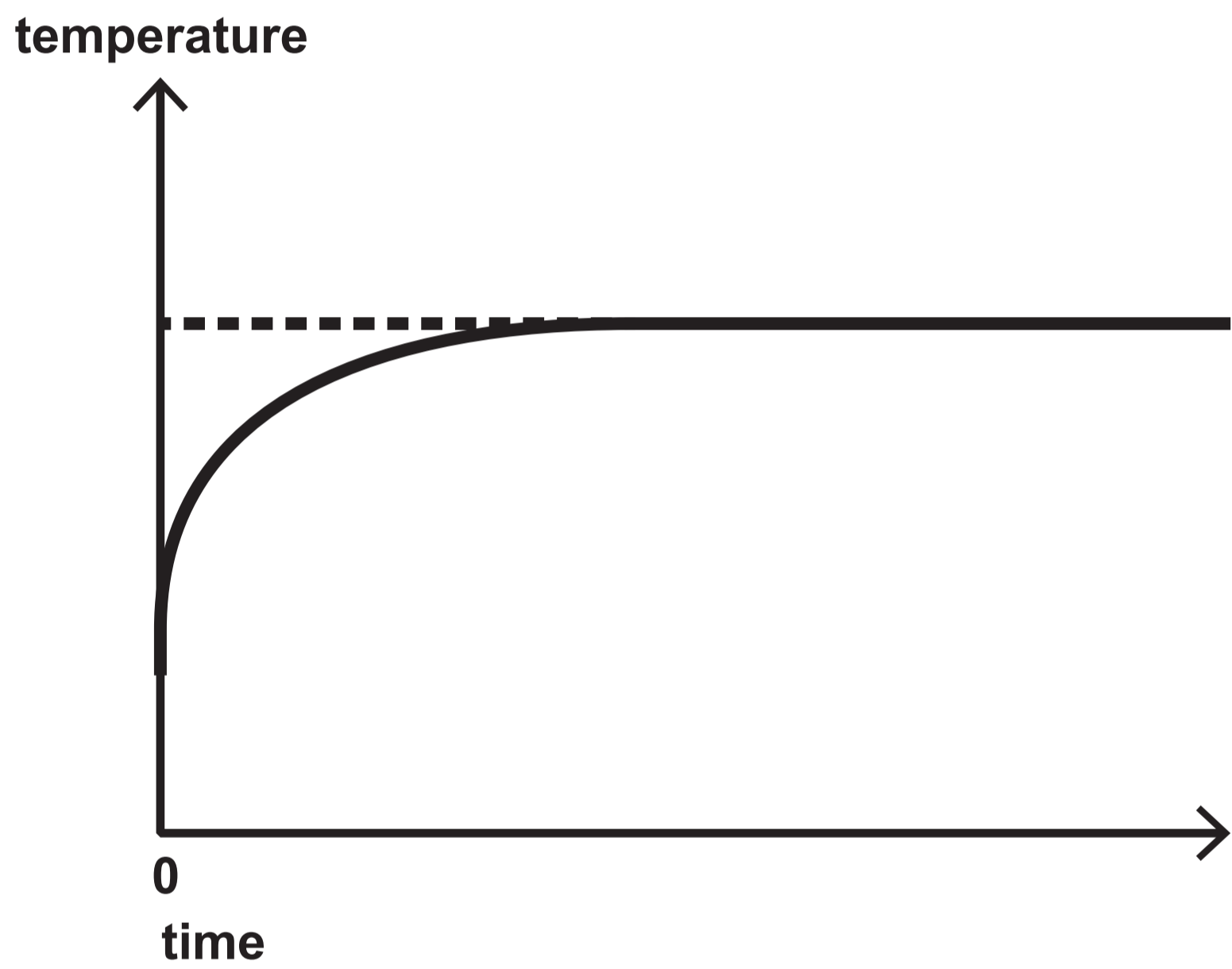
Question 8(b)(i)

FIGURE 16



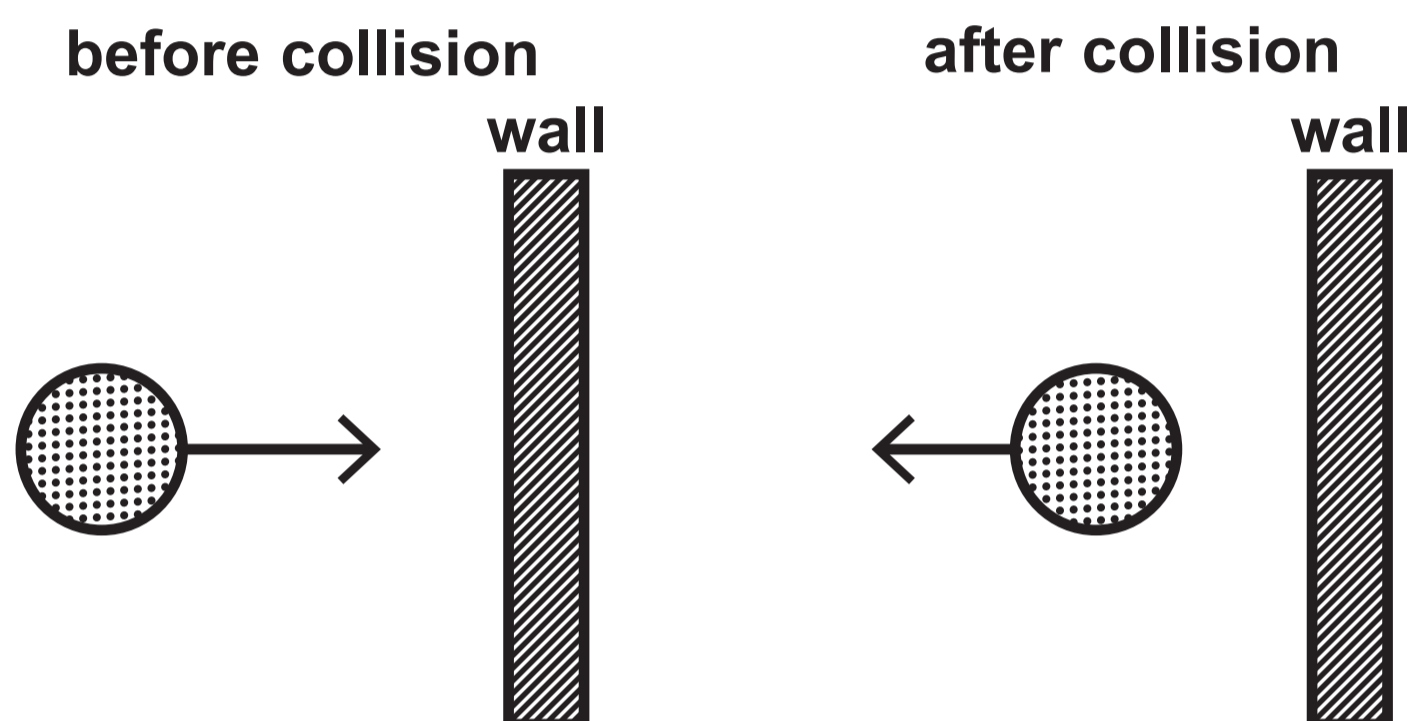
Question 8(b)(ii)

FIGURE 17



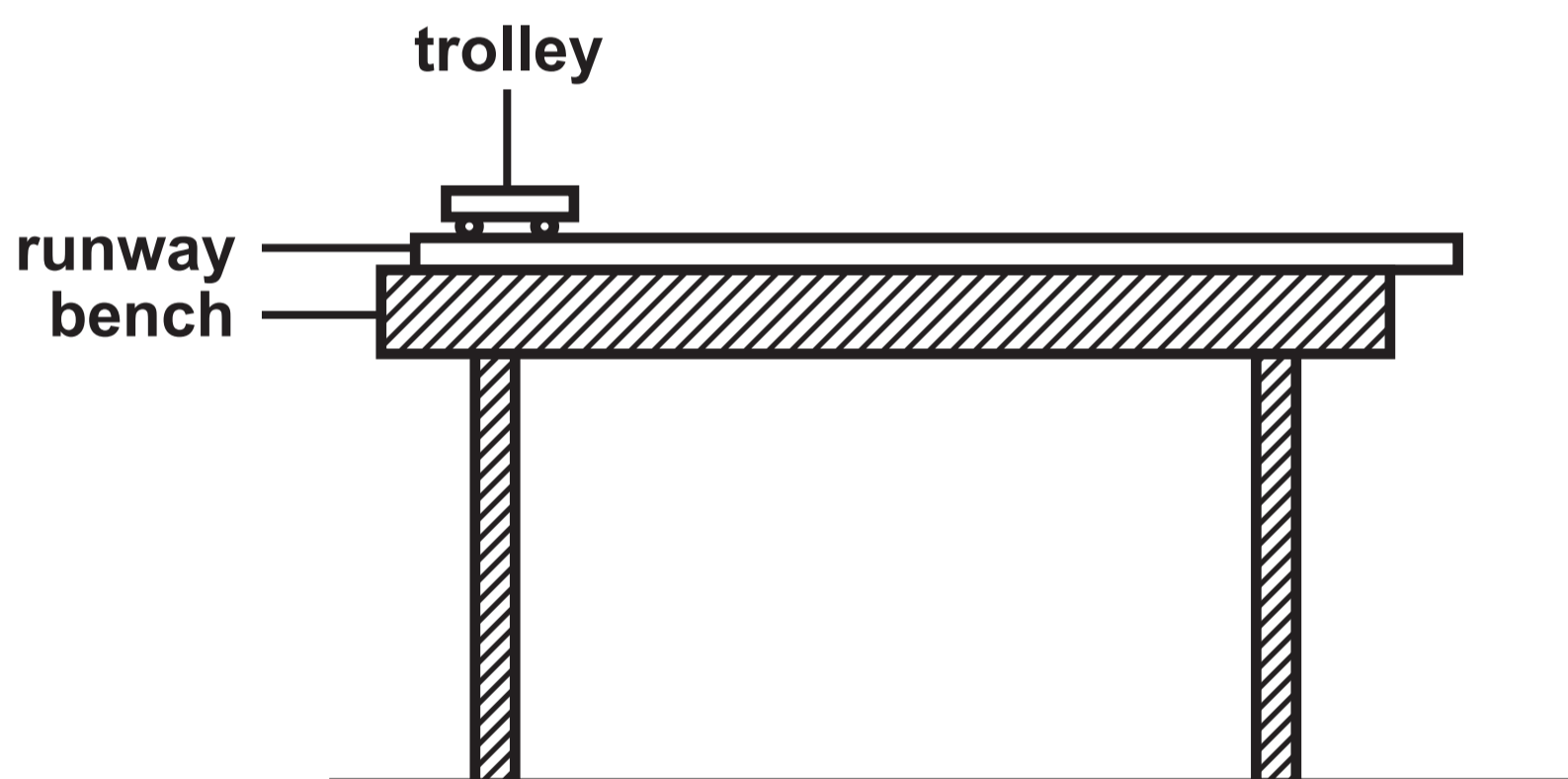
## Question 9(b)

FIGURE 18



## Question 9(c)

FIGURE 19

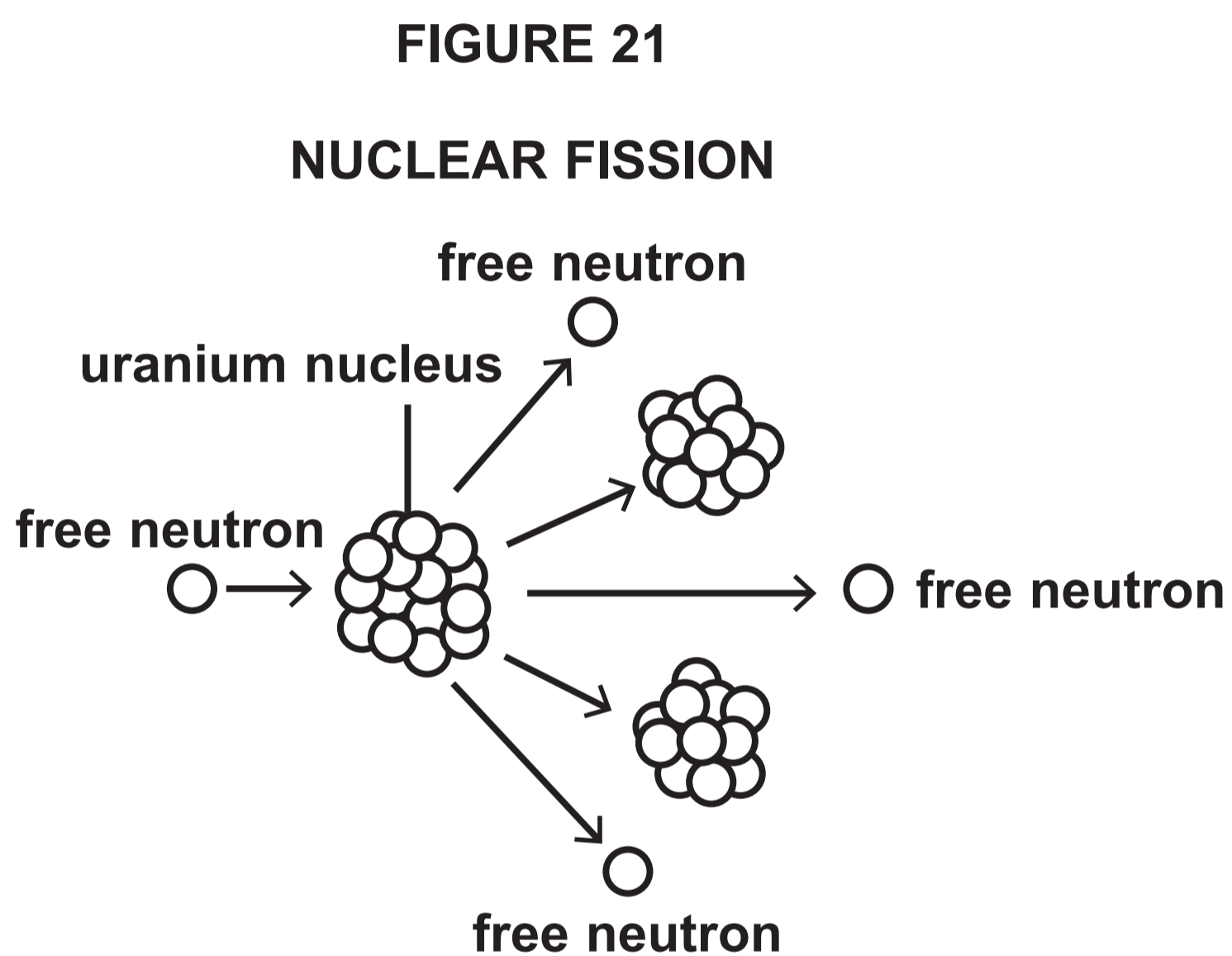


**FIGURE 20**

The black and white photograph shows a 6-wheeled vehicle carrying navigation equipment and solar panels across the rocky surface of Mars.



## Question 10(b)



## Question 2(b)(iii)

FIGURE 4

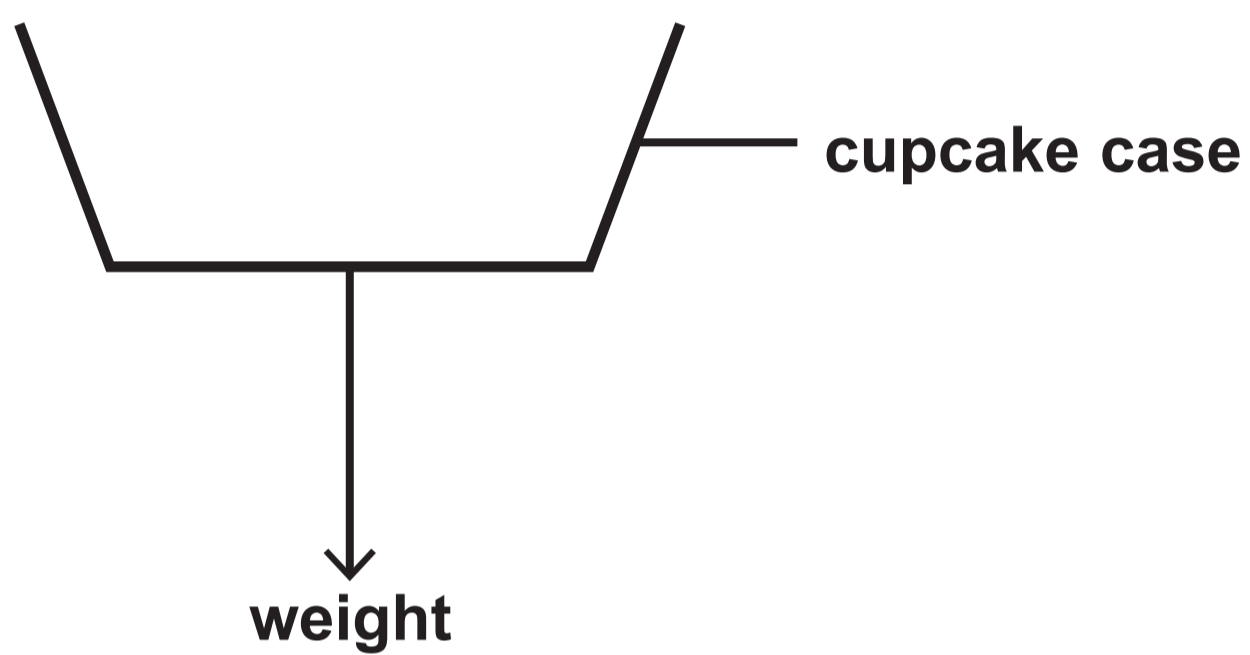
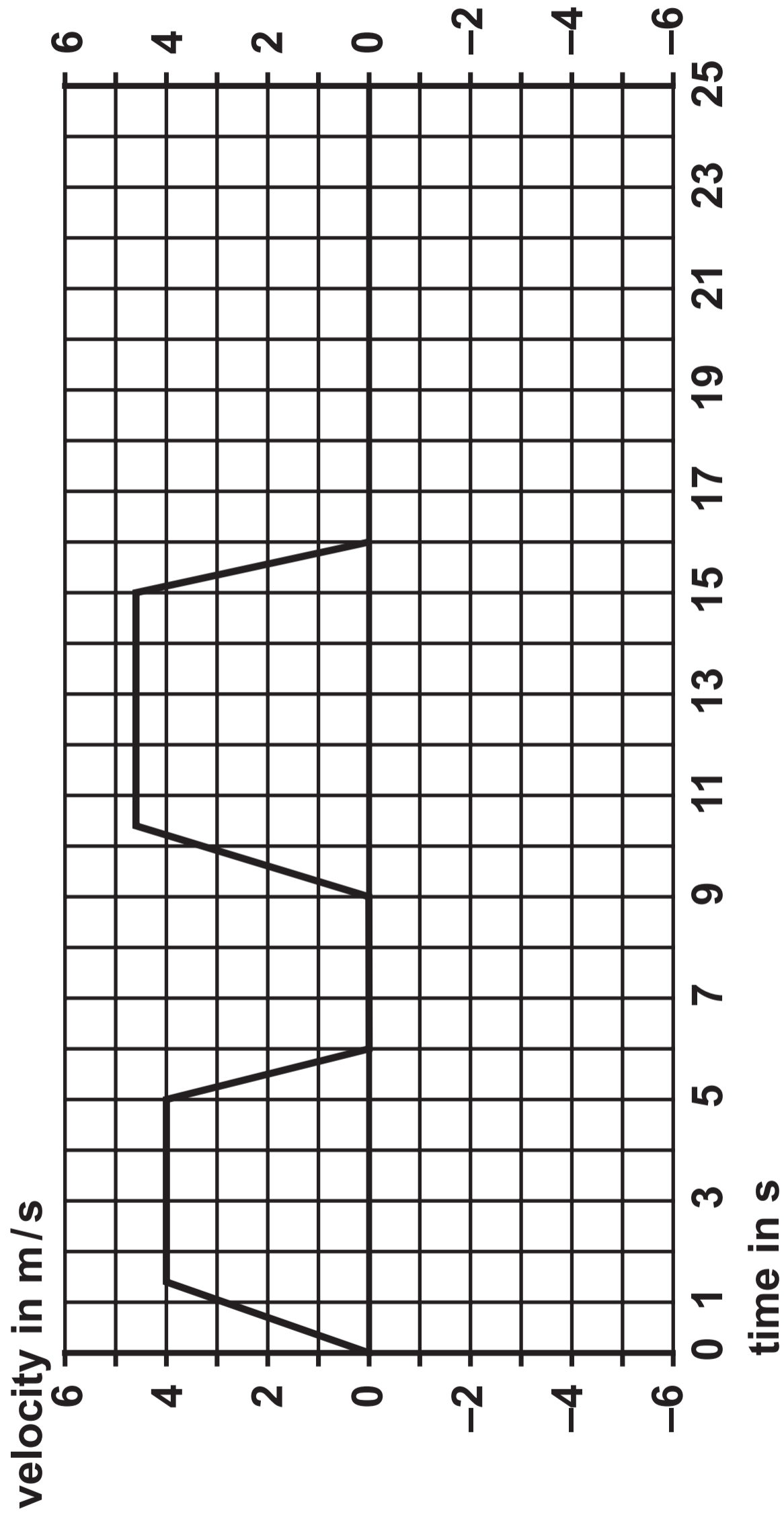
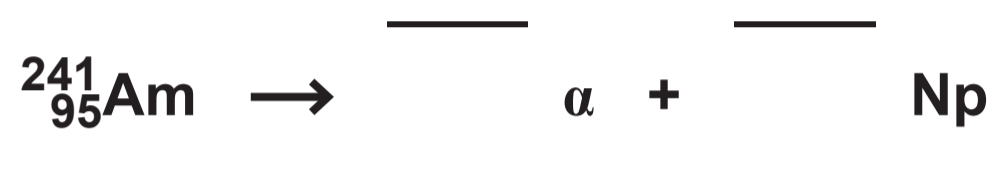


FIGURE 8



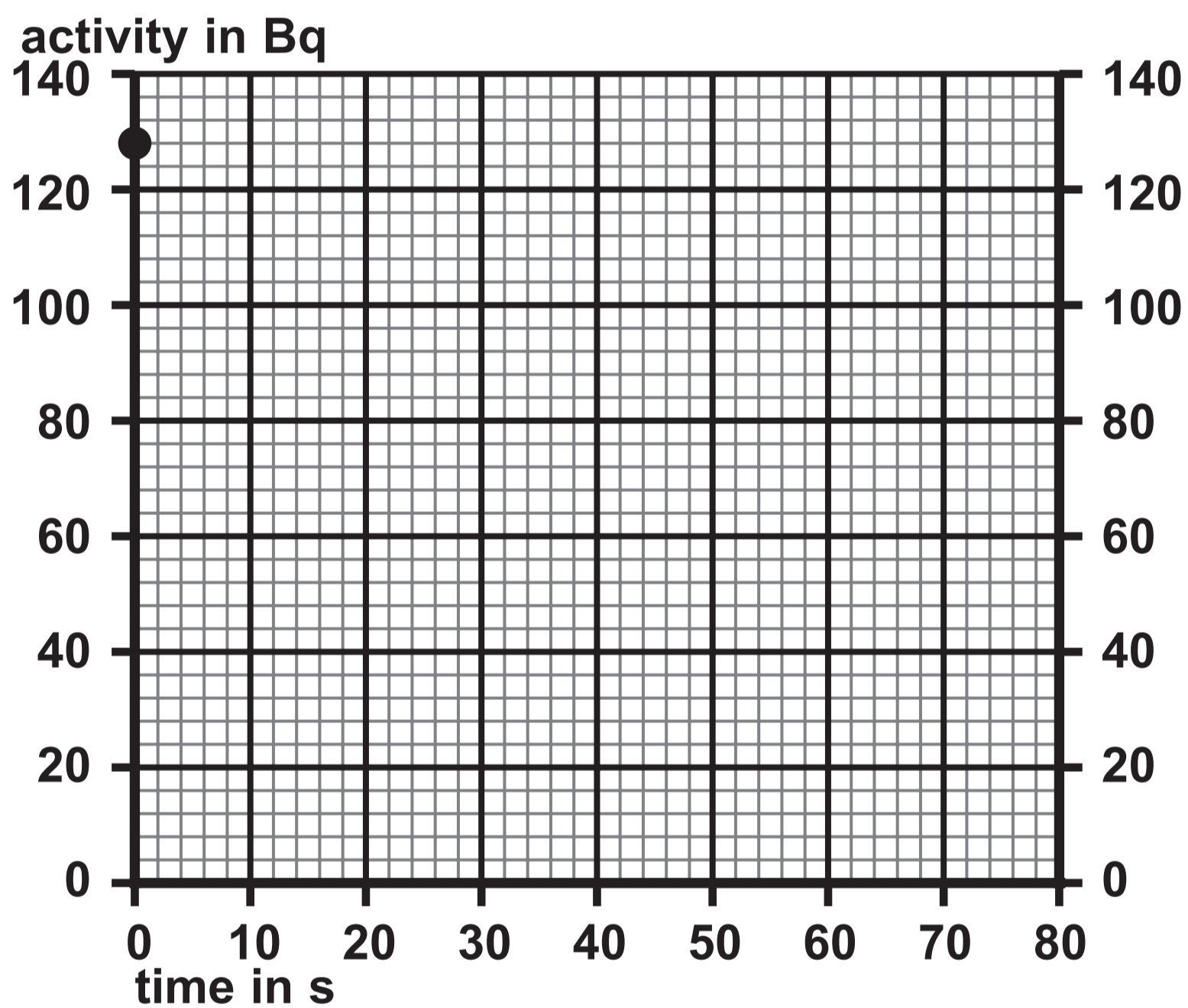
## Question 7(a)(iii)

FIGURE 12



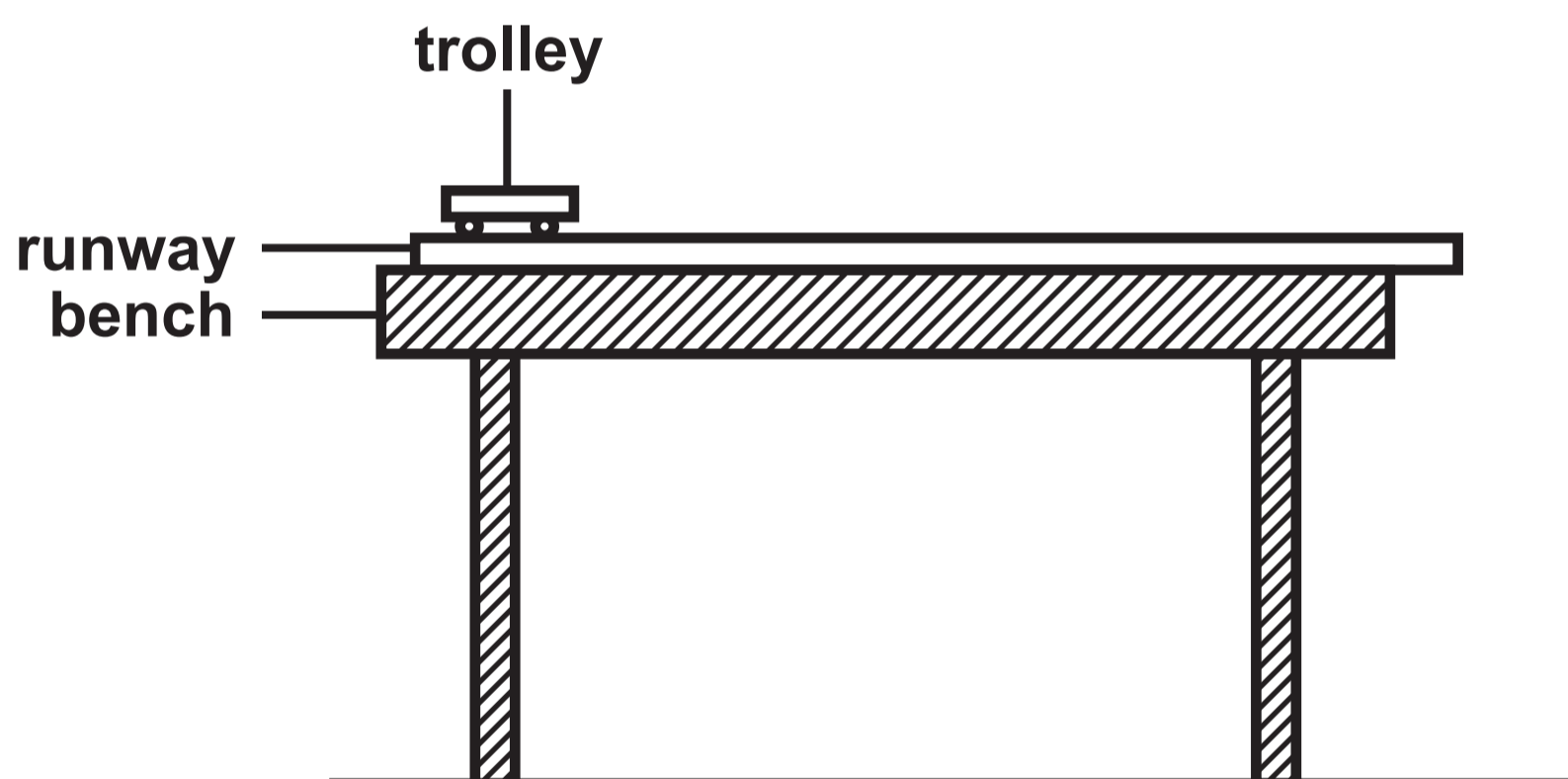
## Question 7(b)

FIGURE 13



## Question 9(c)

FIGURE 19



**Question 2(b)**

**(Source: adapted from © Anton Starikov/Shutterstock)**

**(Source: adapted from © Elena Schweitzer/Shutterstock)**

**Question 10(a)**

**(Source: © BEST-BACKGROUNDS/Shutterstock)**

**Question 10(b)**

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